

A new gall-inducing phlaeothripid species (Insecta: Thysanoptera) from South Africa

by

RICHARD ZUR STRASSEN

Forschungsinstitut Senckenberg, Frankfurt am Main, Germany

Mallothrips giliomeei spec. nov., from the southwestern Cape Province, South Africa, is described and illustrated. The species belongs in the Phlaeothripidae to the tribe Hoplothripini and inhabits the leaves of the tree *Nuxia floribunda* Benthham (Loganiaceae) causing marginal leaf rolls. This is the first record of *Mallothrips* outside India.

INTRODUCTION

Several samples of the thrips species described below were collected in previous years in Stellenbosch by Prof. Jan Giliomee from leaves of *Nuxia floribunda* Benthham. According to a letter from him (4.III.1981) the specimens were feeding on young leaves which then became stunted and rolled up along the edges. The thrips were found inside the rolls. The present writer, too, has recently taken a good number of specimens from the foliage of the same loganiacean tree which grows near the university building housing the Department of Entomology and Nematology.

The species, which belongs to the Hoplothripini, was at first placed tentatively in *Epilothrips* Priesner 1964 because of its *Liothrips*-like shape and the presence of a fore tarsal tooth in males. However, in *Epilothrips* the males have slender legs instead of strongly enlarged ones as in the new species; the females have at the fore tarsus not the slightest indication of a tooth, whereas in the new species there is a swelling at the inner margin, more distinct in large specimens than in small ones. According to these characters the new species fits better in *Mallothrips* Ramakrishna 1928 which was erected for an Indian species which is also gall-inhabiting. This classification is given here preference to the alternative of the creation of a new genus for the South African taxon.

The new species is dedicated to my esteemed colleague and friend, Prof. Dr. Jan Giliomee, Head of the Department of Entomology and Nematology, Stellenbosch, to whom I am grateful for the material of the new thrips and for having shown me the particular host tree from which the first samples were taken. The holotype will be deposited in the National Collection of Insects, Plant Protection Research Institute, Pretoria (NCI), paratypes will be stored in the same institution as well as in the Department of Entomology, Stellenbosch, the Forschungsinstitut Senckenberg, Frankfurt am Main, Germany (SMF), the British Museum of Natural History, London, and the Smithsonian Institution, Washington.

***Mallothrips giliomeei* spec. nov., Figs 1–9**

Antennal segment VII petiolate or at least strongly narrowed towards base, its basal margin distinctly smaller than apical margin; maxillary bridge wanting; meso-praesternum consisting of two well separated sclerites; base of fore wing colourless (not brown), subbasal wing setae as well as the semilateral seta on tergites II–VI pale; in female the inner margin of fore tarsus with a swelling (not with a well defined tooth); seta S_1 on tergite IX much shorter than seta S_2 and than the tube.

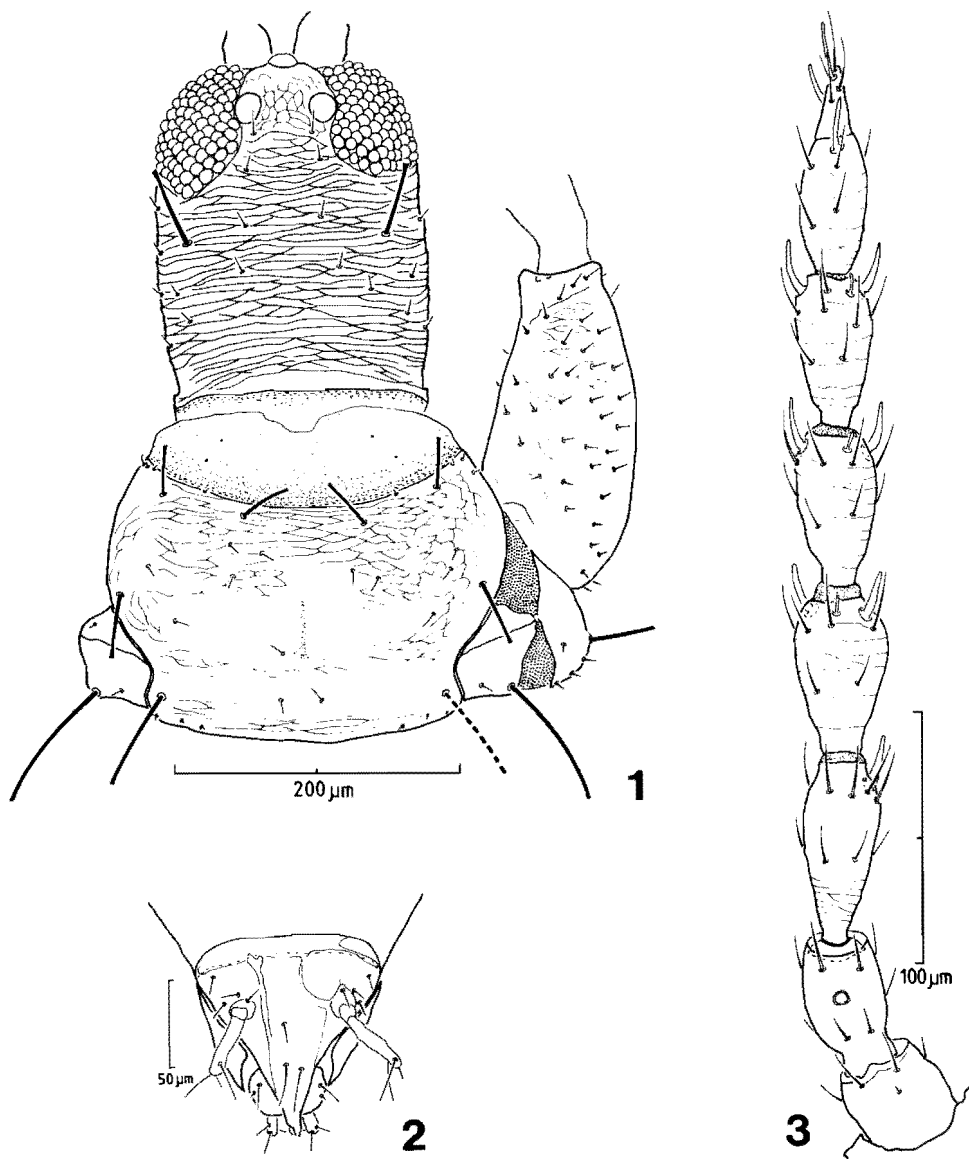
FEMALE: Length (distended): 1860–2570 μm . Body deep dark brown in colour, almost black, fore tibia somewhat paler, its apical fifth even pale brown, fore tarsi yellowish brown. Antennal segments I and II dark brown, the latter with its outer lateral margin and the apex brownish; segments III–VI yellow, segment VII yellowish brown, becoming slightly darker towards apex, VIII pale brown. Wings almost clear, or only slightly tinged with yellow. Pronotal setae brown, epimerals yellowish, subbasal wing setae and main abdominal setae pale except for the terminal setae at apex of tube which are brownish.

Head (Fig. 1) in small specimens 1.0–1.2 times, in large specimens 1.2–1.4 times as long as broad, lateral margins markedly narrowed shortly before the base, dorsal surface densely transversely striate, cheeks without tubercles, but with several very small setae; postocular seta blunt, 40–53 μm long, 126–140 μm apart. Mouth cone (Fig. 2) 118–145 μm long, narrowly rounded; maxillary stylets retracted into head capsule not quite as far as the level of the postocular setae, strongly diverging oculad, their interval at the level of the hind margin of the head about one third of the head's width across its base. Antenna (Fig. 3) 1.8–1.9 times as long as the head, segment III slightly longer and somewhat narrower than IV, ratio length/width of segment III = 1.9–2.0, of IV = 1.6–1.7, segment VII petiolate, its basal margin distinctly smaller than its apical one.

Pronotum (Fig. 1) about 0.68–0.75 times shorter than the head, with delicate transverse anastomosing lines which extinguish in the centre of the disc; pronotal setae blunt, antero-marginal, antero-angular and mid-lateral setae almost equal in length (24–34 μm), postero-angular 46–75 μm long, epimeral setae blunt, 49–104 μm long. For legs (Fig. 4) enlarged, particular the femur (163–241 μm long), without teeth, fore tarsus with a swelling at the inner margin, in large specimens more distinct than in small ones. Tarsi of mid and hind legs clearly longer than the longest subapical seta dorsally on the corresponding tibia.

Pterothorax about as long as broad. Metapraesterum (Fig. 5) divided into two separate triangular sclerites. Subbasal setae of fore wing blunt, of approximately the same length, setae S_2 and S_3 often almost pointed, interval between these two setae slightly shorter than that between S_1 and S_2 ; hind margin of fore wing with 8–13 duplicated cilia.

Abdomen hardly broader than pterothorax. Pelta (Fig. 6) roughly triangular with the posterior angles slightly extended laterad, somewhat broader than long. Tergite II (Fig. 6) along the longitudinal midline as long as the pelta, surface laterally between the location of the sigmoid setae and lateral marginal with 5–8 short setae. Seta S_1 on tergite IX much shorter (100–128 μm) than the neighbouring seta S_2 (132–172 μm), disc at about the level of the two discal campaniform sensillae with 5–6 small thin setae placed in a transverse row. Tube 1.9–2.0 times as long as tergite IX, longest terminal seta 138–195 μm .



Figs 1–3. *Mallothrips giliomeei* **spec. nov.**, Paratype females. 1. Head and pronotum, ♀ (SMF T 10458'3), KOH treated. 2. Mouth cone, ventral aspect, ♀ (SMF T 10458'4). 3. Right antenna dorsally, ♀ (SMF T 16616'2). Drawings made by Andrea Vesmanis.

Measurements in μm of some parts of the body of the holotype (L = length, W = width): Head L 225, greatest W 189, W across base 161, eye L dorsally 86, antenna total L 425, L/W of segment I 43/37, II 52/33, III 64/32, IV 62/37, V 56/33, VI 54/32, VII 49/26, VIII 32/14; pronotum L 165, greatest W 264, W across anterior margin 198, fore femur L 224, W 89, fore tibia L 161, pterothorax L 373, W 388, mesonotum L 93, metanotum L 231, W 252, fore wing L 910, W across scale 86, W across middle 90, subbasal seta S_1 L 46, S_2 L 44, S_3 L 51; pelta L 112, W 127, tergite II L 110, tergite IX L 86, W 192, tube L 166, W at base 83.

MALE: Length (distended): 1845–2395 μm . Very similar to female, in oedymorous specimens with larger prothorax, somewhat stronger fore legs and slightly more slender antennal segments.

Fore tibia at the apical margin normal in small specimens (Fig. 7), but somewhat pronounced at the inner edge in large individuals (Fig. 8); for tarsal tooth in small specimens 9–11 μm , in the largest ones up to 23 μm long.

Length/width in μm of the antennal segments of a small paratype male, followed by the according values of one of the largest paratype males: (small) I 34/31, II 45/29, III 54/29, IV 54/32, V 49/30, VI 46/29, VII 44/23, VIII 30/13; (large) I 44/40, II 57/34, III 72/34, IV 66/37, V 62/34, VI 57/31, VII 56/25, VIII 34/14.

Sternite VIII (Fig. 9) almost completely occupied by an area porosa.

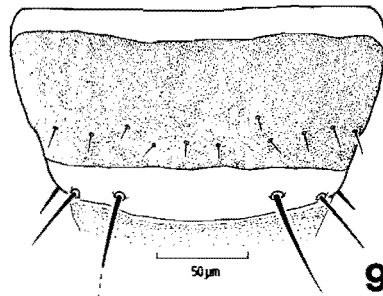
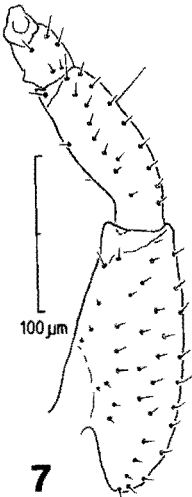
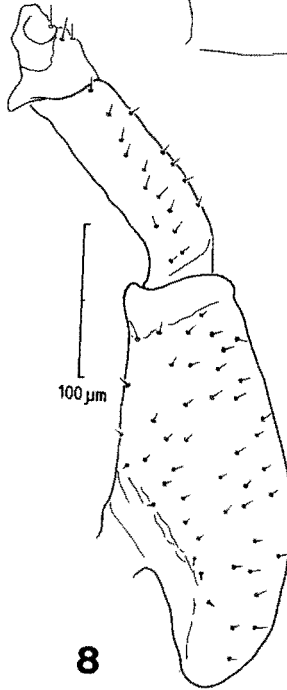
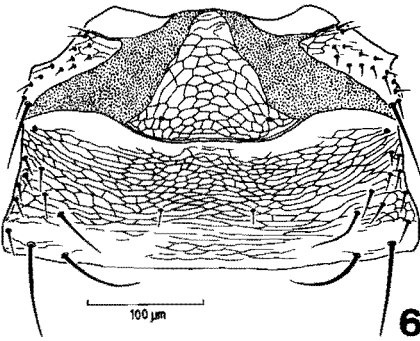
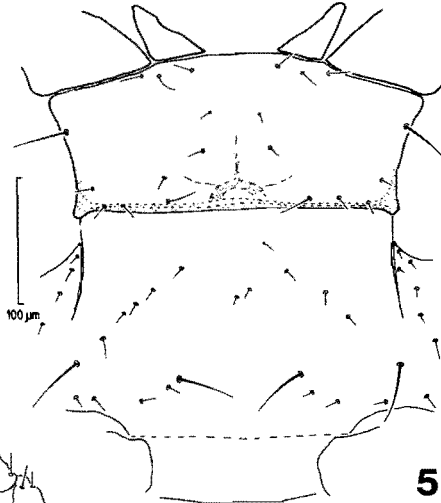
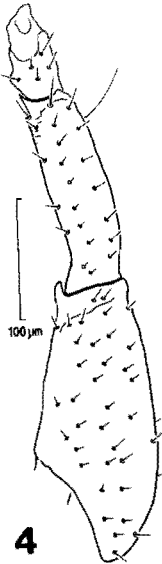
LARVA II: Body colour pale yellow except for the somewhat stronger sclerotized parts which are greyish, i.e. head and antennae, pronotal plate, legs, lateral plates of tergite VIII, all of abdominal segments IX and X, and the many small circular plates on which the setae are inserting; darkest parts are the terminal antennal segments and the lateral plates of tergite VIII; setae pale grey, most of them knobbed or expanded at tip, except for setae S_2 and S_6 on the prothorax which are almost acute.

Total body length 1780–1890 μm . Head little broader (120–126 μm) than long (108–113 μm), postocular setae 30–43 μm long, maxillary stylets 28–34 μm apart in front of the hind margin of the head. Antennae 272–282 μm long, their pits 23 μm apart, segment III 57–66 μm , IV 46–52 μm long, segments VI and VII fused, 52–57 μm long. Pronotal plate 106–114 μm long, 200–223 μm broad; length of the dorsal setae on prothorax, in μm : S_1 17, S_2 23–26, S_3 34–43, S_4 34–40, S_5 35–44, S_6 60–74, S_7 34–52. Longest dorsal setae on meso- and metathorax each 46–69 μm . Tergite VIII with seta S_1 40–46 μm , S_2 41–52 μm long; abdominal segment IX 69–74 μm long, 92–100 μm broad, length of its seta S_1 66–77 μm , S_2 70–81 μm , S_3 61–76 μm ; segment X 69–80 μm long, 58–66 μm broad at base, longest terminal seta 138–166 μm .

MATERIAL EXAMINED: Holotype ♀ (NCI), South Africa, Cape Province, Stellenbosch, from rolled leaves of *Nuxia floribunda* Benth., 8.v.1981, J. Giliomee leg.

Paratypes: 9♂♂, 11♀♀, 6 larvae II (SMF T 10458) together with holotype;

Figs 4–9. *Mallothrips giliomeei* spec. nov., Paratype females. 4. Right fore leg dorsally, ♀ (SMF T 16616'3). 5. Mesosternum and metasternum, ♀ (SMF T 10458'4). 6. Abdominal segments I and II dorsally, ♀ (SMF T 10458'3). Paratype males. 7. Right fore leg dorsally, ♂ (SMF T 10458'5), small specimen. 8. Right fore leg dorsally, ♂ (SMF T 16616'4), large specimen. 9. Sternite VIII, ♂ (SMF T 10458'7) KOH treated. Drawings made by Andrea Vesmanis.



3♂♂ 7♀♀ (SMF T 9987), same locality, tree and collector as before, 26.ii.1981; 7♂♂ 35♀♀ (SMF T 16616), same locality and tree as before, 23.xi.1989, R. zur Strassen leg.

DISCUSSION: The new species is placed in *Mallothrips* Ramakrishna 1928 with some proviso because of the kind of construction of the foretarsus in female which shows only a swelling at the inner margin instead of a well defined tooth. Besides this difference, the type species of the genus, *indicus* Ramakrishna 1928, and the new species look superficially similar. There are nonetheless some additional characters which separate *giliomezi* **spec. nov.** from *indicus*. Middle and hind tarsi are dark brown (yellow in *indicus*), wings are almost clear (not brownish), their subbasal setae are pale (not dark brown), interval between seta S_2 and S_3 slightly shorter (not longer) than that between S_1 and S_2 ; antennal segment VII is petiolate (instead of slightly narrowed basad in *indicus*); maxillary bridge is absent (present in *indicus*); tergite II along midline as long as the pelta (shorter than in *indicus*), laterally with 5–8 (instead 2–3) short setae; tergite IX next to the discal campaniform sensillae with 5–6 small setae (without in *indicus*), its seta S_1 in female much shorter than S_2 (instead of being equal in length).

REFERENCES

- PRIESNER, H. 1964. A monograph of the Thysanoptera of the Egyptian deserts. *Publications de l'Institut du desert d'Egypte* **13**: 1–549.
- RAMAKRISHNA AYYAR, T. V. 1928. A contribution to our knowledge of the Thysanoptera of India. *Memoirs of the Department of Agriculture in India (Entomological series)* **10** (7): 217–316.

Accepted 1 April 1991